

IN THE CLAIMS:

1. (currently amended) In a network of Bluetooth protocol devices, a method for establishing communications comprising:
 - prior to broadcasting a piconet beacon frequency,
 - establishing a piconet with a master device;
 - the master device broadcasting a ~~master identity signal~~ piconet beacon frequency at a first predetermined frequency $f(k_P)$ from a plurality of spread spectrum transmission frequencies, wherein the ~~master identity signal~~ piconet beacon frequency includes the master device's Bluetooth address (BD_addr) and clock (CLK) information;
 - an inquiring device monitoring to receive the ~~master identity signal~~ piconet beacon frequency, including the BD_addr and CLK information of the master device in a first downlink frequency hop synchronization (FHS) packet, and deriving a master device frequency hopping sequence from the master device BD_addr and master device CLK information; and
 - following the receiving of the first downlink FHS packet by the inquiring device, transmitting a first uplink FHS packet from the inquiring device to the master device, including an inquiring device BD_addr in the FHS packet payload and an access code (AC) derived from the master device BD_addr
 - ~~in response to receiving the master identity signal, the inquiring device establishing communications with the piconet master device.~~

2-9. canceled

10. (currently amended) The method of claim [[9]] 1 wherein establishing communications includes, following the receiving of the first uplink FHS packet by the master device, transmitting a second downlink FHS packet from the master device to the inquiring device.

11. (original) The method of claim 10 wherein transmitting a second downlink FHS packet from the master device to the inquiring device includes transmitting an active member address (AM_addr) in the FHS packet payload.

12. (original) The method of claim 11 wherein transmitting a second downlink FHS packet from the master device to the inquiring device includes transmitting a FHS packet access code derived from the inquiring device BD_addr.

13. (previously presented) The method of claim 12 wherein establishing communications includes, following a receiving of the second downlink FHS packet by the inquiring device, transmitting an ID packet from the inquiring device to the master device, acknowledging a receipt of the AM_addr.

14. (previously presented) The method of claim 13 wherein establishing communications includes:

following a receiving of the ID packet by the master device, transmitting a POLL packet from the master device to the inquiring device;

in response to receiving the POLL packet, transmitting a NULL packet from the inquiring device to the master device; and
establishing higher level protocols between the master device and the inquiring device.

15. (original) The method of claim 14 wherein establishing higher level protocols between the master device and the inquiring device includes the inquiring device becoming a piconet slave device.

16. (currently amended) The method of claim 15 wherein broadcasting a ~~master identity signal~~ piconet beacon frequency includes the master device broadcasting the first downlink FHS packet in a slot at frequency $f(k_B)$;

wherein transmitting the first uplink FHS packet includes:

the inquiring device randomly selecting a number m , where m is a number between 1 to 8 for a contention period of 15 slots;

the inquiring device transmitting the first uplink FHS packet in the slot at frequency $f(k_B + (2m-1))$;

wherein the master device transmits the second downlink FHS packet in the slot at frequency $f(k_B + 2m)$; and,

wherein the inquiring device transmits the ID packet in the slot at frequency $f(k_B + (2m+1))$.

17. (original) The method of claim 16 wherein the inquiring device randomly selecting a number m includes randomly selecting a number m between 1 to 8; and,

the method further comprising:
establishing a contention period equal to fifteen slots; and
the master device waiting $(2m-1)$ slots from the broadcast of the piconet beacon frequency at frequency $f(k_P)$ to receive a first uplink FHS packet from an inquiring device.

18. (original) The method of claim 16 further comprising:
establishing a contention period equal to fifteen slots; and
the master device waiting a maximum of fifteen slots from the broadcast of the piconet beacon frequency at frequency $f(k_P)$ to receive a first uplink FHS packet from an inquiring device.

19. (currently amended) The method of claim 1 further comprising:
establishing a piconet with a master device; and
wherein broadcasting a ~~master identity signal~~ piconet beacon frequency includes the master device broadcasting at the ~~master identity signal~~ piconet beacon frequency at a first plurality of predetermined piconet beacon frequencies from the plurality of spread spectrum transmission frequencies;
wherein monitoring for the ~~master identity signal~~ piconet beacon frequency includes monitoring the first plurality of piconet beacon frequencies; and
wherein establishing communications with the piconet includes establishing communications in response to receiving the ~~master identity signal~~ piconet beacon frequency in one of the plurality of monitored piconet beacon frequencies.

20. (currently amended) In a network of Bluetooth protocol devices, a method for a master device to permit the establishment of piconet communications comprising:

a master device broadcasting a ~~master identity signal~~ piconet beacon frequency in a first downlink FHS packet including the master device's BD_addr and CLK information, at a first predetermined frequency $f(k_B)$ from a plurality of spread spectrum transmission frequencies;

receiving a first uplink FHS packet from an inquiring device, in response to broadcasting the ~~master identity signal~~ piconet beacon frequency, wherein the first uplink FHS packet includes the inquiring device BD_addr in the FHS packet payload and a FHS packet access code (AC) derived from the master device BD_addr; and

following the receiving of the first uplink FHS packet by the master device, transmitting a second downlink FHS packet from the master device to the inquiring device with an AM addr in the FHS packet payload.

21-24. canceled

25. (currently amended) The method of claim [[24]] 20 wherein transmitting a second downlink FHS packet from the master device to the inquiring device includes transmitting a FHS packet access code derived from the inquiring device BD_addr.

26. (original) The method of claim 25 further comprising:

following the transmission of the second downlink FHS packet by the master device, receiving an ID packet from the inquiring device acknowledging the receipt of the AM_addr.

27. (previously presented) In a network of Bluetooth protocol devices, a method for an inquiring device to establish communications with a piconet, the method comprising:

monitoring to receive the piconet beacon frequency at a first predetermined frequency $f(k_B)$ from a plurality of spread spectrum transmission frequencies, wherein the piconet beacon frequency includes a master device Bluetooth address (BD_addr) and clock (CLK) information in a first downlink FHS packet;

in response to receiving the piconet beacon frequency, transmitting a first uplink frequency hop synchronization (FHS) packet to establish communications with the piconet, wherein FHS packet includes the inquiring device BD_addr in the FHS packet payload and a FHS packet access code (AC) derived from the master device BD_addr;

following the transmission of the first uplink FHS packet, receiving a second downlink FHS packet from the master device including an active member address (AM_addr) in the FHS packet payload and a FHS packet access code derived from the inquiring device BD_addr; and

deriving the master device frequency hopping sequence from the master device BD_addr and master device CLK information.

28-31. canceled

32. (previously presented) The method of claim 27 further comprising:

following the receiving of the second downlink FHS packet by the inquiring device, transmitting an ID packet to the master device, acknowledging the receipt of the AM_addr.

33. (currently amended) A system for establishing communications in a network of Bluetooth protocol devices, the system comprising:

a master device broadcasting a ~~master identity signal~~ piconet beacon frequency at a first predetermined frequency $f(k_p)$ from among a plurality of spread spectrum broadcast frequencies, including the master device's Bluetooth address (BD_addr) and clock (CLK) information;

at least one inquiring device monitoring the ~~master identity signal~~ piconet beacon frequency, receiving the BD_addr and CLK information of the master device in a first downlink frequency hop synchronization (FHS) packet broadcast, deriving a master device frequency hopping sequence from the master device BD_addr and CLK information, and transmitting a first uplink FHS packet to the master device following the reception of the first downlink FHS packet, including an inquiring device BD_addr in the FHS packet payload, and a FHS packet access code (AC) derived from the master device BD_addr in response to receiving the ~~master identity signal~~, establishing communications with the master device.

34. canceled

35. (currently amended) The system of claim 33 wherein the master device broadcasts the ~~master identity signal~~ piconet beacon frequency at a first plurality of predetermined frequencies from among the plurality of spread spectrum broadcast frequencies; and, wherein the inquiring device monitors the first plurality of piconet beacon frequencies and, in response to receiving one of the ~~master identity signal~~ piconet beacon frequencies, establishes communications with the master device.

36-41. canceled

42. (currently amended) The system of claim ~~[[41]]~~ 33 wherein the master device transmits a second downlink FHS packet to the inquiring device following the reception of the first uplink FHS packet.

43. (original) The system of claim 42 wherein the master device transmits a second downlink FHS packet to the inquiring device including an active member address (AM_addr) in the FHS payload.

44. (original) The system of claim 43 wherein the master device transmits a second downlink FHS packet to the inquiring device including a FHS packet access code derived from the inquiring device BD_addr.

45. (previously presented) The system of claim 44 wherein the inquiring device transmits an ID packet to the master device following a reception of the second downlink FHS packet, acknowledging a receipt of the AM_addr.

46. (previously presented) The system of claim 45 wherein the master device transmits a POLL packet to the inquiring device following a receipt of the ID packet by the master device;
wherein the inquiring device transmits a NULL packet to the master device in response to receiving the POLL packet; and,
wherein the master device establishes higher level protocols with the inquiring device following the receipt of the NULL packet.

47. (original) The system of claim 46 wherein the inquiring device becomes a piconet slave device following the establishment of higher level protocols with the master device.

48. (previously presented) The system of claim 47 wherein the master device broadcasts the first downlink FHS packet in a slot at frequency $f(k_B)$;
wherein the inquiring device randomly selects a number m , and transmits the first uplink FHS packet in the slot at frequency $f(k_B + (2m-1))$;
wherein the master device transmits the second downlink FHS packet in the slot at frequency $f(k_B + 2m)$; and,
wherein the inquiring device transmits the ID packet in the slot at frequency $f(k_B + (2m+1))$.

49. (original) The system of claim 48 in which a contention period equal to fifteen slots is established;

wherein the inquiring device randomly selecting a number m includes randomly selecting a number m between 1 to 8; and,

wherein the master device waits $(2m-1)$ slots from the broadcast of the piconet beacon frequency at frequency $f(k_P)$ to receive a first uplink FHS packet from an inquiring device.

50. (original) The system of claim 49 in which a contention period equal to fifteen slots is established;

wherein the master device waits a maximum of fifteen slots from the broadcast of the piconet beacon frequency at frequency $f(k_P)$ to receive a first uplink FHS packet from an inquiring device.

51-54. canceled

55. (currently amended) A Bluetooth protocol device inquiring to establish communications with a piconet, the inquiring device comprising:

a receiver having an input to monitor and receive a ~~master identity signal~~ piconet beacon frequency at a first predetermined frequency $f(k_P)$ from among a plurality of spread spectrum broadcast frequencies, wherein the ~~master identity signal~~ piconet beacon frequency includes a first downlink frequency hop synchronization (FHS) packet with the master device Bluetooth address (BD_addr) and clock (CLK) information; [[and]]

a transmitter having an output to establish communications with a piconet master device in response to receiving the ~~master identity signal~~ piconet beacon frequency;

wherein the inquiring device derives the master device frequency hopping sequence from the master device BD addr and CLK information; and

wherein the transmitter transmits a first uplink FHS packet, including its BD addr, to the master device following the reception of the first downlink FHS packet.

56-59.canceled